



Civil Air Patrol



Air Force Incident Manager's Course Briefing



Civil Air Patrol Mission Brief

Lt Col Douglas Goodlin

Director of Operations, Civil Air Patrol-USAF

Mr John Salvador, Lt Col (Ret)

CAP Missions Directorate





History

1941: CAP Established Dec 1st

1943: Transferred to War Department

1946: Incorporated (Public Law 476)

**1948: Auxiliary of the United States
Air Force (PL 557)**

**Missions for
America for
over 66 years**

**CAP is a federally chartered nonprofit
corporation**

CAP is also the official Auxiliary of the Air Force

**First National Board Chairman: Gen "Tooey"
Spaatz**





To Serve America

**... by performing
Homeland Security and
humanitarian missions for
our communities, states,
and nation,**



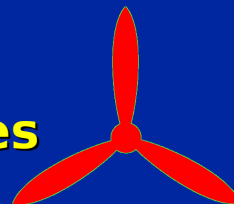
**... by developing our
country's youth, and
educating our citizens on
the importance of air and
space power.**



Missions



Emergency Services



**Search and Rescue /
Disaster Response
(SAR/DR)**

**Homeland Security
Counterdrug
Humanitarian
Services**

AFROTC Flights

Leadership

**Physical Fitness
Activities**

CAP School Program



Cadet Programs

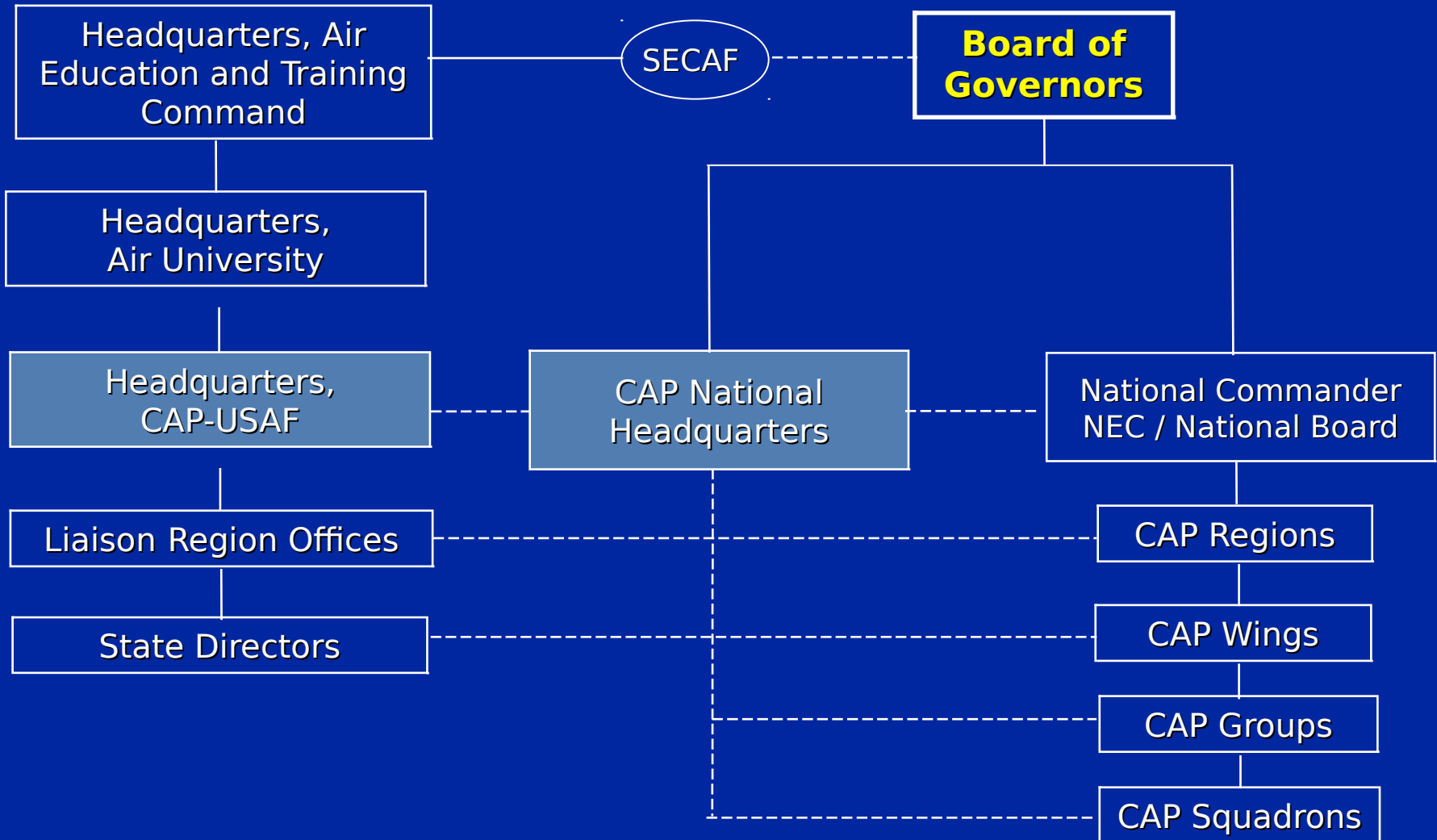


Aerospace Education

**CAP Members
Aerospace Educators
Members
General Public**

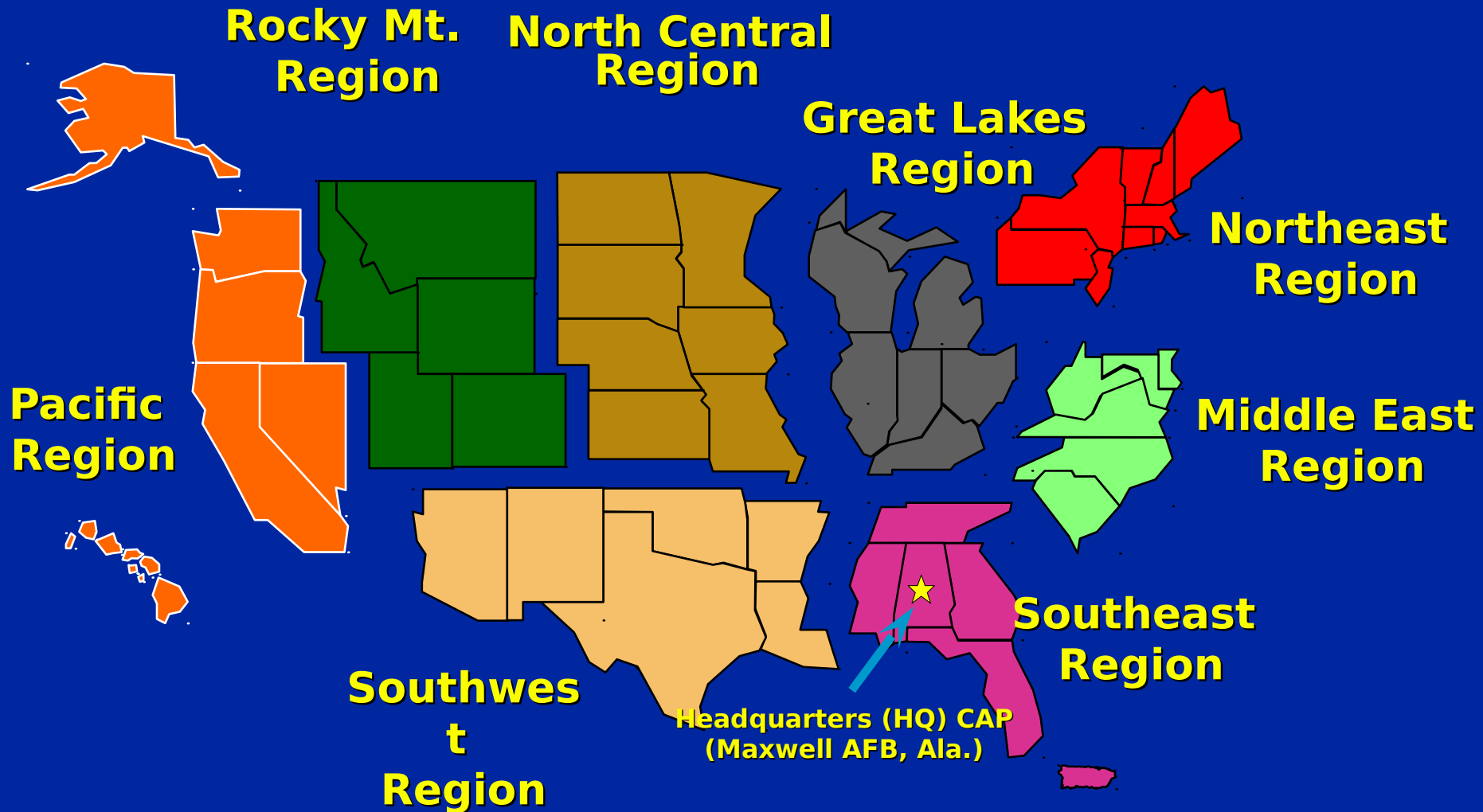


Organizational Structure





Civil Air Patrol Regions





CAP Presence

▲ CAP Units

**Overseas
Units**
3 - Japan
2 -
Germany



CAP Resources

**990
Vehicle**



**4,500
Fixed Land
Radios**



**56,611
Members**
34,575 Officers
22,036 Cadets

**8,100
Mobile
Radios**

**530
Aircraft**





CAP Chaplains

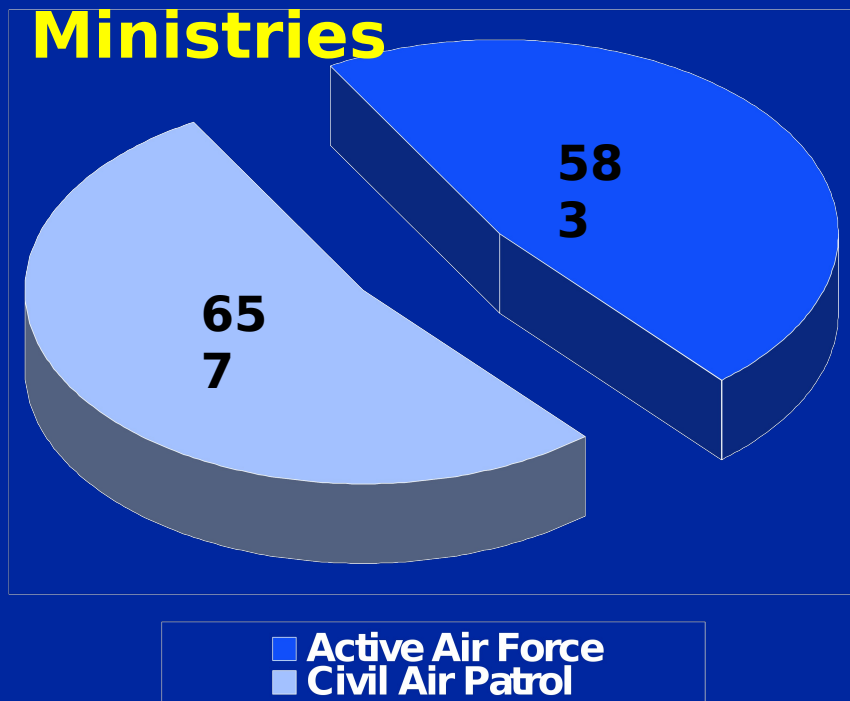


- Same appointment requirements as AF
- Provides CAP moral leadership development
- Assist Air Force Chaplain Service



Chaplain Force Multiplier

A Partnership in Ministries



CAP Chaplains

- Currently support 19 military installations, including 13 AF bases
- Working to integrate chaplains into 1AF contingency plan for Continental United States support



Modern Aircraft

Cessna 182

- Garmin G-1000 glass cockpit
- 88 in the field
- Expect 15 more in Jan 08



Gippsland Aeronautics GA-8

- Hyper Spectral Imaging (ARCHER) platform
- 16 in the field



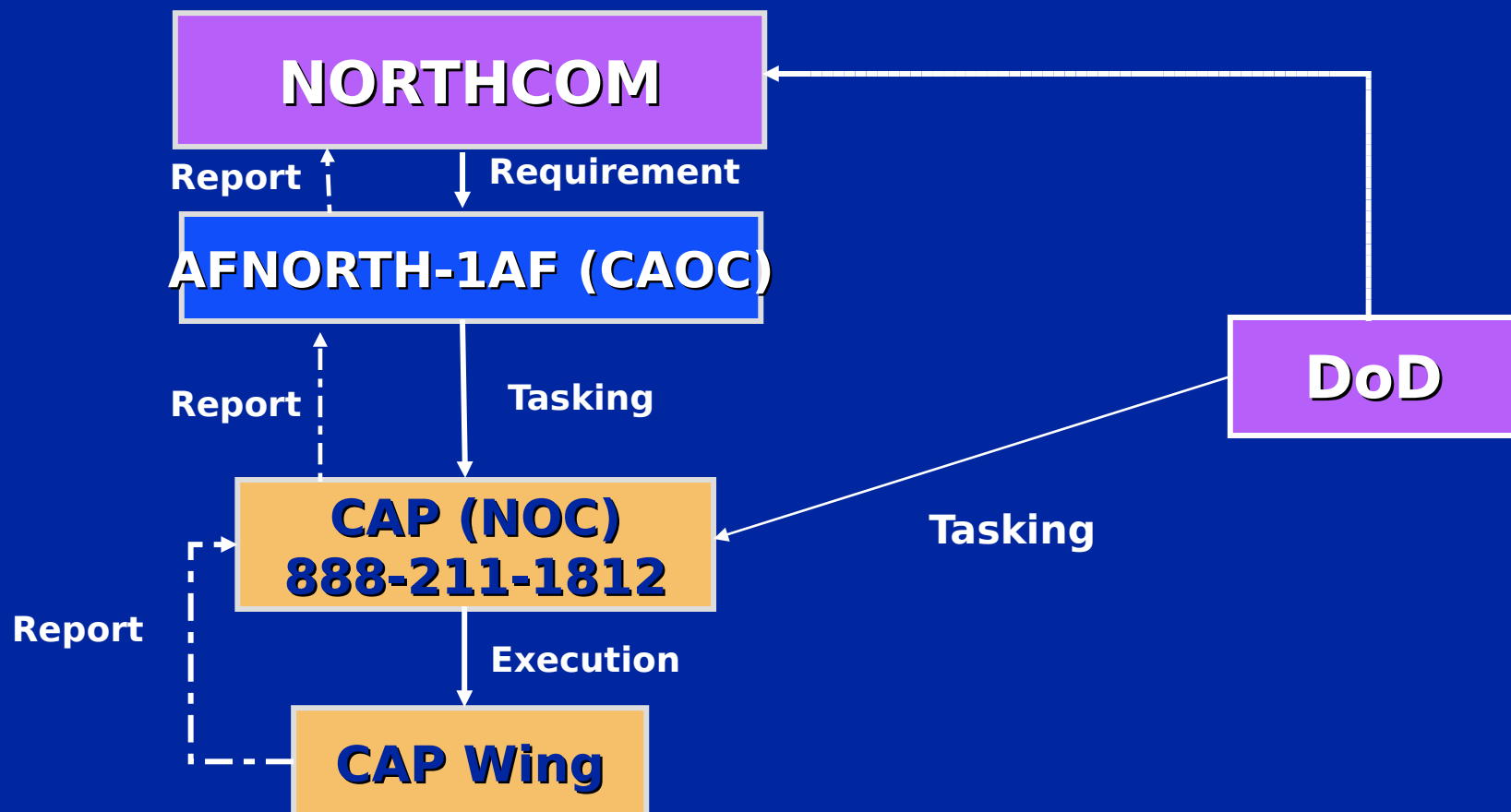


National Operations Center

- **Centralized mission coordination center**
 - **Obtain United States Air Force approval**
 - **AF Assigned & CAP Corporate Missions**
 - **Homeland Security**
 - **Counterdrug**
 - **Disaster Relief**
 - **Coordinate additional resources from other wings**
 - **Consolidate and up-channel mission reports**



Request for Forces



CAP ... Remain Under Military Operational Control ...



AF Crash Support





AFNORTH Exercise

SITUATION: Incident caused damage to the Kentucky Dam on the Tennessee River

REQUIREMENT: Damage assessment photos as soon as possible

RESULT: CAP Images delivered within hours



Pre-mission imagery

Post-mission imagery





Other Exercises

**Federal Emergency
Management Agency
Heartland Response**
- New Madrid Fault Exercise



**Northern Command
Support**
- United Defense
- Determined Promise

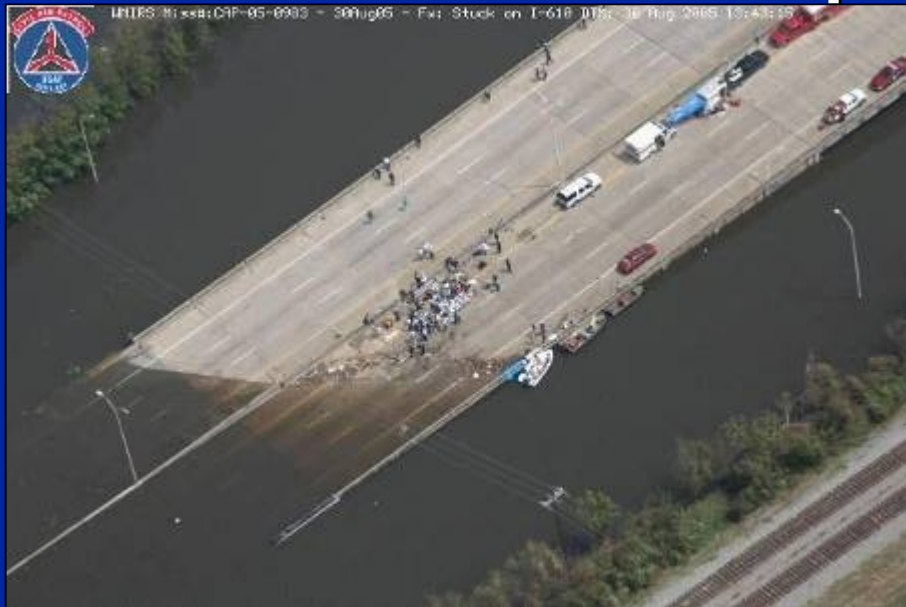




Hurricane Support

Hurricanes Katrina, Rita, Ophelia and Wilma

- 1,048 Air Sorties
- 2,023 Flight Hours; 131 Ground Team Missions
- Provided air transportation for hundreds of





Additional Support

- **Critical infrastructure**
- **Restricted or sensitive areas**
- **Borders**





Operations



SDIS

Satellite-Transmitted Digital Imaging System

- Status
 - 100 systems in service now

ARCHER

Airborne Real-time Cueing Hyperspectral Enhanced Recon

- Status
 - 16 systems fielded





SDIS

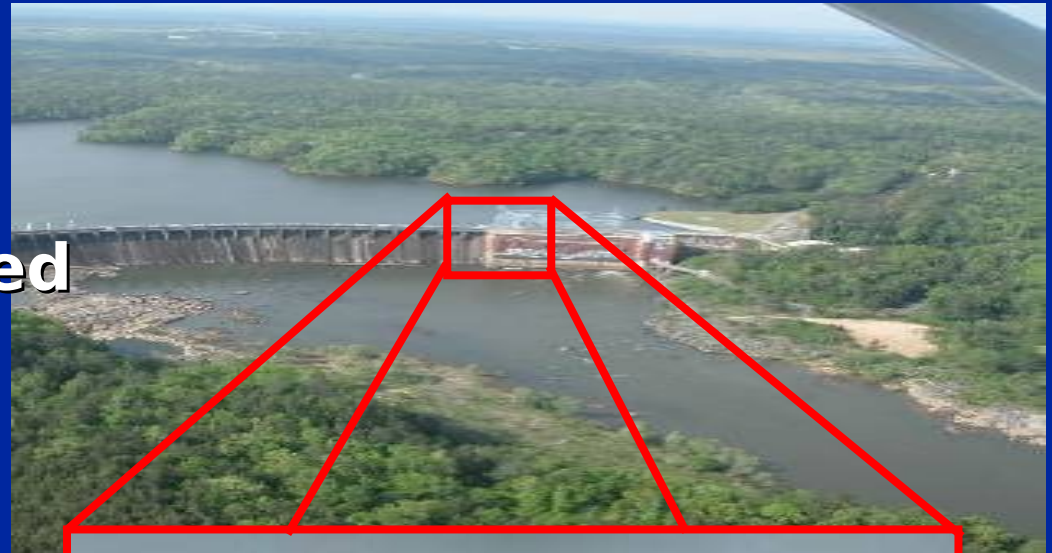
What is SDIS?

Satellite-transmitted

Digital

Imaging

System





SDIS



Digital Photo
automatically loaded
into aircraft laptop



Locate the target.
Take a digital photo

Image attached to an
e-mail and sent via
satellite phone



E-mail with
image sent
by satellite
to Globalstar
Internet
Gateway

Globalstar USA

World Wide Web



**Our Customers View in
WMIRS**



SDIS

Technology that enables CAP to send high resolution digital imagery from CAP aircraft to anyone anywhere in the world

Images are sent as JPEG attachments via standard e-mail to multiple addresses and/or a password-protected website

Imagery is transmitted near real-time. Files take less than 2 minutes to transmit.





SDIS





ARCHER

What is ARCHER?

Airborne

Real-Time

Cueing

Hyperspectral

Enhanced

Recon





ARCHER

- **ARCHER is a custom-designed system of hyperspectral imaging (HSI) hardware and software.**
- HSI is a technology that allows a sensor on a moving platform to **detect and/or gather reflected radiation** (light) from man-made or natural objects on the ground.
- Hyperspectral Imaging will **support current and future CAP missions**
 - Search and Rescue (SAR)
 - Counter Drug (CD)
 - Homeland Security (HLS)



ARCHER

ARCHER executes three separate algorithms for target acquisition and identification:

- **Spectral signature matching:** detects specific spectral signatures using matched filters (find things with known spectral properties)
 - Potential Missions: HLS
- **Anomaly detection:** detects spectral anomalies (things that do not “belong”)
 - Potential Missions: Search and Rescue, Disaster Relief
- **Change detection:** detects changes over time through a pixel-by-pixel comparison.
 - Potential Missions: HLS, Disaster Relief



ARCHER

- ARCHER is a **non-invasive** reflective light technology
- ARCHER will **NOT** make detections:
 - Through solid materials (e.g., roofs, buildings, walls, floors, etc.)
 - Underground
 - Under snow
 - Under water
 - At night



ARCHER



HSI Aircraft: GA-8 Airvan

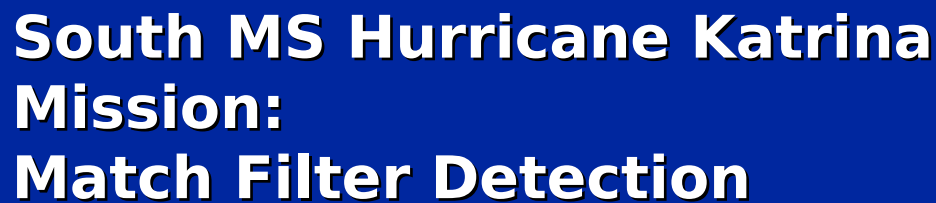


ARCHER



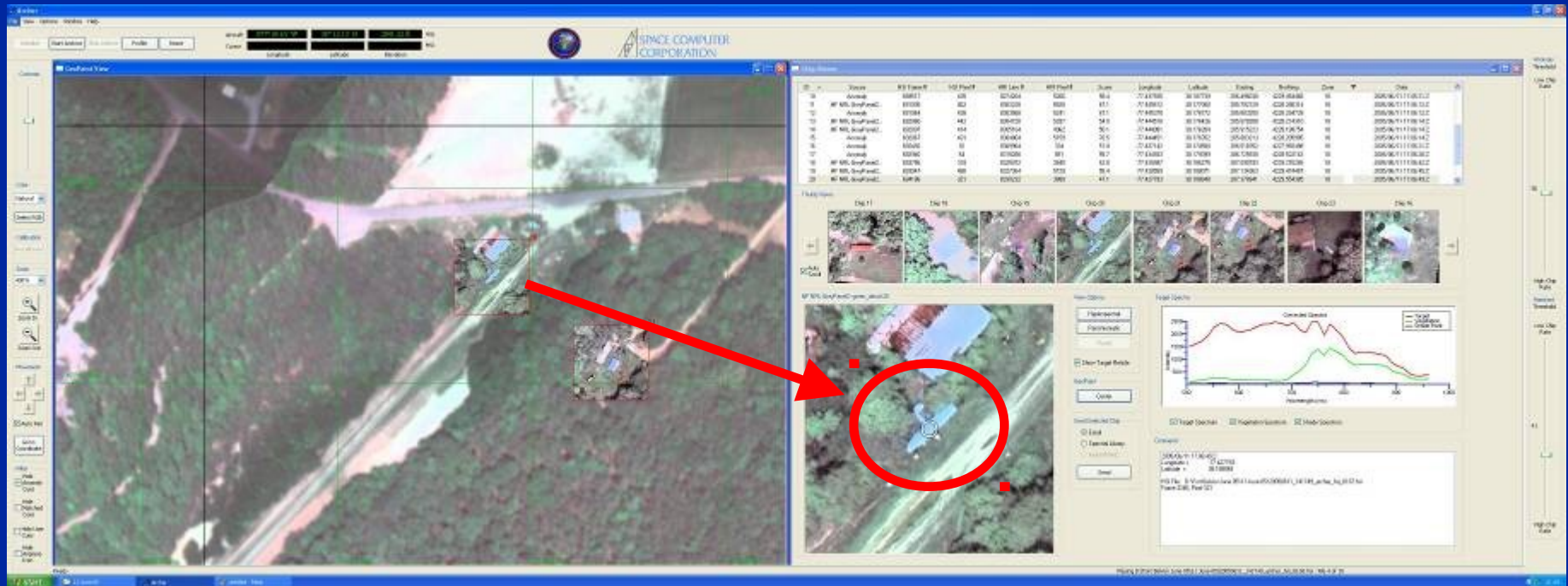
ARCHER Onboard







ARCHER



**Fort AP Hill Test Mission:
Match Filter Detection**

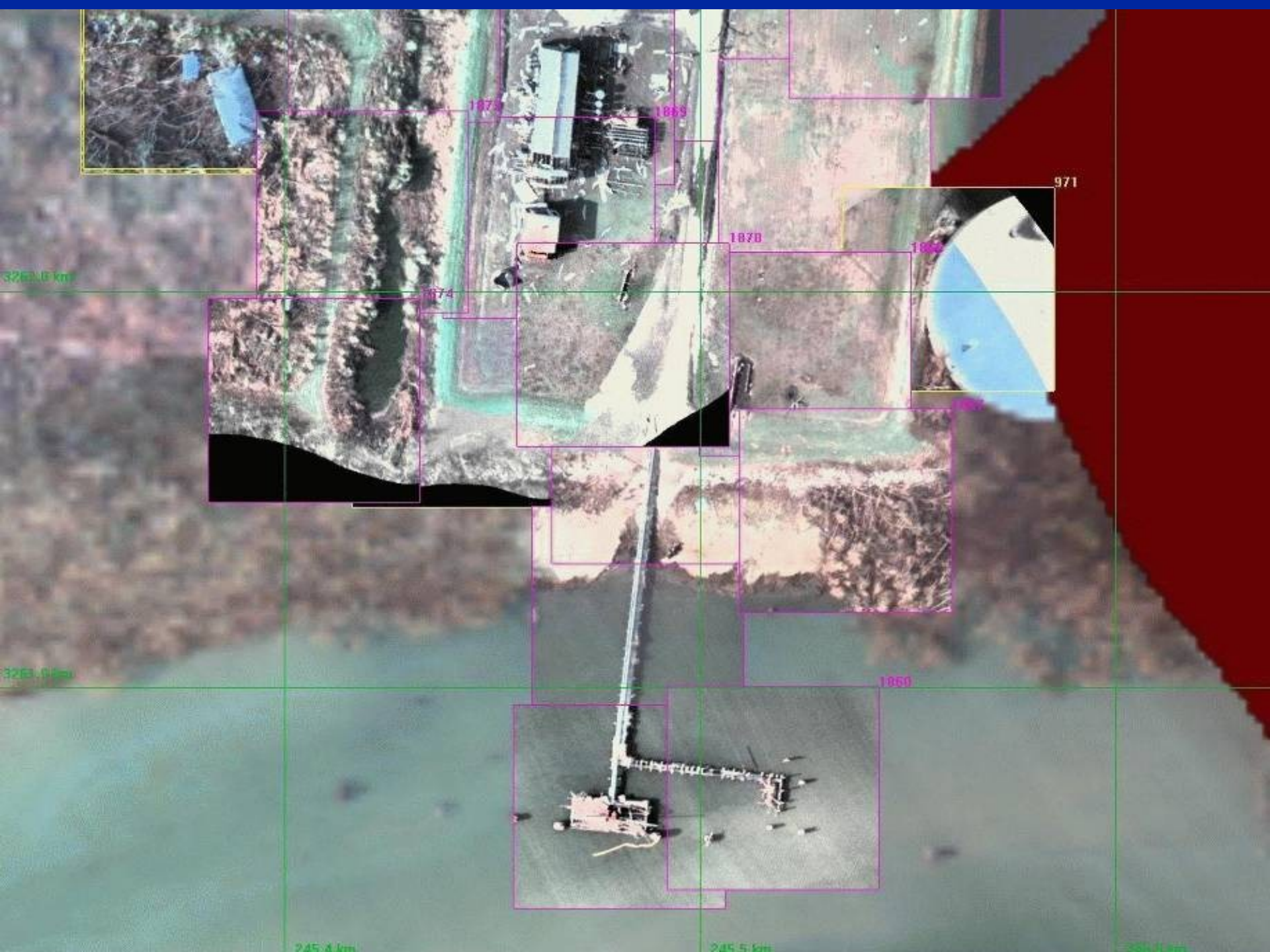


ARCHER



**Mojave, CA Test:
Target Deployment**





1873

1869

971

1878

1864

1874

1860

245.4 km

245.5 km

245.6 km

3262.0 km

3263.0 km



SDIS & ARCHER Combined

Hurricane Katrina Support



SDIS

HSI





ARCHER Change Detection



Sortie 1



Sortie 2



-
- The screenshot displays the Google Earth desktop application. On the left, a data table lists various points of interest with columns for Name, Source, ID, Elevation, and other attributes. The main 3D view shows a cityscape with a red arrow pointing to a specific location. The right-hand panel contains a 'Tools' section with a '3D View' button, a 'Map' section with a 'Map' button, and a 'Graph' section with a 'Graph' button. A small graph is visible in the bottom right corner of the right-hand panel.

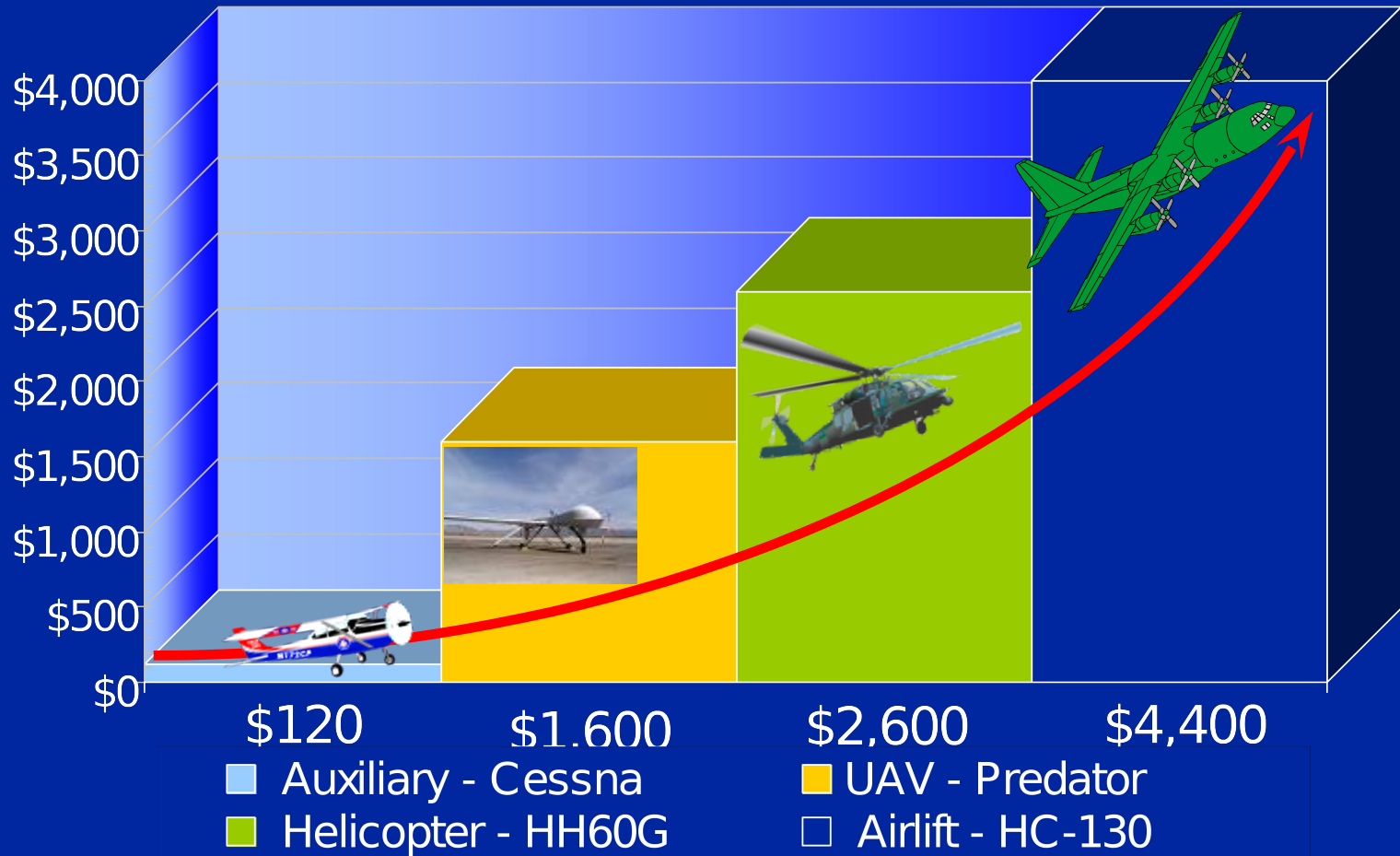


Support Available to You

- **Airborne Reconnaissance**
- **Intercept Training**
- **Communications Support**
- **Off/on-station cordon support & crowd control**
- **Shelter Management**
- **Critical Incident Stress Management**
- **Chaplain Services**
- **Base Exercise Evaluation Team support**



Cost-effective Force Multiplier





Bottom-line

- **Civil Air Patrol is ready, willing, and able to assist with any emergency or contingency**
- **Civil Air Patrol volunteers will meet your requirements for responsiveness through training, education, and professionalism**
- **Civil Air Patrol is a cost effective force multiplier and wants to help!**



Civil Air Patrol



... performing missions for